



TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))			Docket No. 17106	
In Re Application Of: Roland Contreras, et al.				
Serial No. 10/713,970	Filing Date November 14, 2003	Examiner Unassigned	Group Art Unit Unassigned	
Title: MODIFICATION OF PROTEIN GLYCOSYLATION IN METHYLOTROPHIC YEAST				
Address to: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450				
37 CFR 1.97(b)				
1. <input checked="" type="checkbox"/> The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.				
37 CFR 1.97(c)				
2. <input type="checkbox"/> The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:				
<div style="margin-left: 40px;"> <input type="checkbox"/> the statement specified in 37 CFR 1.97(e); </div>				
OR				
<div style="margin-left: 40px;"> <input type="checkbox"/> the fee set forth in 37 CFR 1.17(p). </div>				

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Payment of Fee (Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))			
<input type="checkbox"/> A check in the amount of _____ is attached.			
<input checked="" type="checkbox"/> The Director is hereby authorized to charge and credit Deposit Account No. 19-1013/SSMP as described below.			
<input type="checkbox"/> Charge the amount of _____			
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I certify that this document and authorization to charge deposit account is being facsimile transmitted to the United States Patent and Trademark Office (F:		I certify that this document and fee is being deposited on April 6, 2004 with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
_____ (Date)		 Signature of Person Mailing Correspondence	
_____ Signature		Frank S. DiGiglio	
_____ Typed or Printed Name of Person Signing Certificate		_____ Typed or Printed Name of Person Mailing Certificate	
*This certificate may only be used if paying by deposit account.			
 Signature		Dated: April 6, 2004	
Frank S. DiGiglio Registration No.: 31, 346 SCULLY, SCOTT, MURPHY & PRESSER 400 Garden City Plaza Garden City, NY 11530 (516) 742-4343 FSD:ng CC:			



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Roland Contreras, et al.	Examiner:	Unassigned
Serial No.:	10/713,970	Art Unit:	Unassigned
Filed:	November 14, 2003	Docket:	17106
For:	MODIFICATION OF PROTEIN GLYCOSYLATION IN METHYLOTROPHIC YEAST	Dated:	April 6, 2004

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 C.F.R. §§ 1.97 and 1.98, it is requested that the references, which are listed on the attached Form PTO-1449, be made of record in the above-identified case.

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 6, 2004.

Dated: April 6, 2004



Frank S. DiGiglio

Applicants are submitting copies of the references.

In accordance with the waiver of 37 C.F.R. § 1.98 (a)(2)(i), per 1276 OG 55, August 5, 2003, applicants are not required to submit copies of the U.S. Patent references.

Consideration of this Information Disclosure Statement is respectfully requested, since the art provided may be material to the examination of the present application as defined under 37 C.F.R. §1.56.

Inasmuch as this Information Disclosure Statement is being mailed prior to the issuance of a first Official Action, no fee or certification is required.

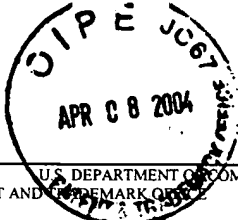
Respectfully submitted,

A handwritten signature in black ink, appearing to read "F. DiGiglio", is written over the typed name.

Frank S. DiGiglio
Registration No. 31,346

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Form PTO-1449
(REV. 7-80) PATENT AND TRADEMARK OFFICE
U.S. DEPARTMENT OF COMMERCE**INFORMATION DISCLOSURE CITATION***(Use several sheets if necessary)*

Atty. Docket No. (Optional)

17106

Application Number

10/713,970

Applicant(s)

Roland Contreras, et al.

Filing Date

November 14, 2003

Group Art Unit

Unassigned

U.S. PATENT DOCUMENTS

EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (if appropriate)
	1.	5,705,616	1/6/1998	Lehle et al.			
	2.	5,135,854	8/4/1992	MacKay et al.			
	3.	US-2002/0137134/A1	09-2002	Gerngross			

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	4.	8-336387	12/24/1996	Japan				
	5.	WO 91/05057	4/18/1991	PCT				
	6.	EP 0 582 244 A2	2/9/1994	EPO				
	7.	WO 96/21038	7/11/1996	PCT				
	8.	EP 0 314 096	5/3/1989	EPO				
	9.	EP 1 211 310 A1	6/5/2002	EPO				
	10.	EP 0 548 012 A1	6/23/1993	EPO				
	11.	WO 02/00856 A2	1/3/2002	PCT				
	12.	WO 92/09694	6/11/1992	PCT				
	13.	WO 02/00879 A2	1/3/2002	PCT				

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	14.	Maras, M., et al., "Molecular Cloning and Enzymatic Characterization of a <i>Trichoderma Reesei</i> , 1, 2 - α -D-Mannosidase", <u>Journal of Biotechnology</u> Vol., 77, No. 2-3, pp. 255-263 (2000)
	15.	Bretthauer, R. K., et al., "Glycosylation of <i>Pichia pastoris</i> -derived Proteins", <u>Biotechnol. Appl Biochem.</u> Vol. 30, pp. 193-200 (1999)

EXAMINER

DATE CONSIDERED

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449 U.S. DEPARTMENT OF COMMERCE (REV. 7-80) PATENT AND TRADEMARK OFFICE		Atty. Docket No. (Optional) 17106		Application Number 10/713,970			
INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i>		Applicant(s) Roland Contreras, et al.					
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	16.	Kukuruzinska, M. A., et al., "Protein Glycosylation in Yeast", <u>Ann. Rev. Biochem.</u> , Vol. 56, pp. 915-944 (1987)					
	17.	Chiba, Y., et al., "Production of Human Compatible High Mannose-Type (Man ₅ GlcNAc ₂) Sugar Chains in <i>Saccharomyces Cerevisiae</i> ", <u>The Journal of Biological Chemistry</u> , Vol. 273, No. 41, pp. 26298-26304 (1998)					
	18.	Maras, M., et al., "In Vivo Synthesis of Complex N-Glycans by Expression of Human N-Acetylglucosaminyltransferase I in the Filamentous Fungus <i>Trichoderma Reesei</i> ", <u>FEBS Letters</u> , Vol. 452, pp. 365-370 (1999)					
	19.	Nakanishi-Shindo, Y., et al., "Structure of the N-Linked Oligosaccharides That Show the Complete Loss of α-1,6-Polymannose Outer Chain from <i>och1</i> , <i>och1 mnn1</i> , and <i>och1 mnn1 alg3</i> Mutants of <i>Saccharomyces Cerevisiae</i> ", <u>The Journal of Biological Chemistry</u> , Vol. 268, No. 35, pp. 26338-26345 (1993)					
	20.	Martinet, W., et al., "Modification of the Protein Glycosylation Pathway in the Methylophilic Yeast <i>Pichia Pastoris</i> ", <u>Biotechnology Letters</u> , Vol. 20, No. 12, pp. 1171-1177 (1998)					
	21.	Maras, M., et al., "In vitro Conversion of the Carbohydrate Moiety of Fungal Glycoproteins to Mammalian-Type Oligosaccharides", <u>Eur. J. Biochem.</u> , Vol. 249, pp. 701-707 (1997)					
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	22.	Laroy, W., et al., "Cloning of <i>Trypanosoma cruzi</i> trans-Sialidase and Expression in <i>Pichia pastoris</i> ", <u>Protein Expression and Purification</u> , Vol. 20, pp. 389-393 (2000)					
	23.	Inoue, T., et al., "Molecular Cloning and Nucleotide Sequence of the 1,2-a-D-Mannosidase Gene, <i>msdS</i> , from <i>Aspergillus Saitoi</i> and Expression of the Gene in Yeast Cells" <u>Biochimica et Biophysica Acta</u> , Vol. 1253, pp. 141-145 (1995)					
	24.	Herscovics, A., et al., "Isolation of a Mouse Golgi Mannosidase cDNA, a Member of a Gene Family Conserved from Yeast to Mammals", <u>The Journal of Biological Chemistry</u> , Vol. 269, No. 13, pp. 9864- 9871 (1994)					
	25.	Lal, A., et al., "Isolation and Expression of Murine and Rabbit cDNAs Encoding an a1,2-Mannosidase Involved in the Processing of Asparagines-linked Oligosaccharides", <u>The Journal of Biological Chemistry</u> , Vol. 269, No. 13, pp. 9872-9881 (1994)					
	26.	Trombetta, E.S., et al., "Endoplasmic Recticulum Glucosidase II is Composed of a Catalytic Subunit, Conserved from Yeast to Mammals, and a Tightly Bound Noncatalytic HDEL-containing Subunit", <u>The Journal of Biological Chemistry</u> , Vol. 271, No. 44, pp. 27509-27516 (1996)					
	27.	Ngo, J.T., et al., "Computational Complexity, Protein Structure Prediction, and the Levinthal Paradox", <u>The Protein Folding Problem and Tertiary Structure Prediction</u> , pp. 491-495 (1994)					
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	28.	Rudinger, J., "Characteristics of the Amino Acids as Components of a Peptide Hormone Sequence", In: Peptide Hormones (Parsons, J.A., Ed.), University Park Press, Baltimore, pp. 1-7 (1976)					
	29.	Invitrogen Catalog, "Yeast Expression", p. 22. (1998)					
	30.	Cregg, J.M., et al., "High-Level Expression and Efficient Assembly of Hepatitis B Surface Antigen in the Methylophilic Yeast, Pichia Pastoris", <u>Biotechnology</u> , Vol. 5, pp. 479-485 (1987)					
	31.	Lehle, L., et al., "Glycoprotein Biosynthesis in <i>Saccharomyces Cerevisiae</i> : <i>ngd29</i> , an <i>N</i> -glycosylation Mutant Allelic to <i>och1</i> having a Defect in the Initiation of Outer Chain Formation", <u>Federation of European Biochemical Societies</u> , Vol. 370, No. 1/2, pp. 41-45 (1995)					
	32.	Yoko-o, T., et al., " <i>Schizosaccharomyces Pombe och1+</i> Encodes α -1,6-mannosyltransferase that is Involved in Outer Chain Elongation of N-linked Oligosaccharides", <u>Federation of European Biochemical Societies</u> , Vol. 489, No. 1, pp. 75-80 (2001)					
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	35.	Tremblay, L.O., et al., "Cloning and Expression of a Specific Human α 1,2-mannosidase that Trims Man ₆ GlcNAc ₂ to Man ₈ GlcNAc ₂ Isomer B During N-glycan Biosynthesis", <u>Glycobiology</u> , Vol. 9, No. 10, pp. 1073-1078 (1999)					
	36.	Gonzalez, D.S., et al., "Identification, Expression, and Characterization of a cDNA Encoding Human Endoplasmic Reticulum Mannosidase I, the Enzyme That Catalyzes the First Mannose Trimming Step in Mammalian Asn-linked Oligosaccharide Biosynthesis", <u>The Journal of Biological Chemistry</u> , Vol. 274, No. 30, pp. 21375-21386 (1999)					
	37.	Kniskern, P.J., et al., "Characterization and Evaluation of a Recombinant Hepatitis B Vaccine Expressed in Yeast Defective for N-linked Hyperglycosylation", <u>Vaccine</u> , Vol. 11, No. 12, pp. 1021-1025 (1994)					
	38.	Nakayama, K., et al., " <u>OCH1</u> Encodes a Novel Membrane Bound Mannosyltransferase: Outer Chain Elongation of Asparagines-linked Oligosaccharides", <u>The EMBO Journal</u> , Vol. 11, No. 7, pp. 2511-2519 (1992)					
	39.	Callewaert, N., et al., "Use of HDEL-Tagged Trichoderm Reesei Mannosyl Oligosaccharide 1,2- α -D-Mannosidase for N-Glycan Engineering in Pichia Pastoris", <u>FEBS Letters</u> , Vol. 503, No. 2-3, pp. 173-178 (2001)					
	40.	Chen, X., et al., "Carbohydrates in Transplantation", <u>Current Opinion in Chemical Biology</u> , pp. 650-658 (1999)					
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41.	Choi, B.K., et al., "Use of Combinatorial Genetic Libraries to Humanize N-linked Glycosylation in the Yeast <i>Pichia Pastoris</i> ", <u>Proceedings of the National Academy of Sciences of the United States</u> , Vol. 100, No. 9, pp. 5022-5027 (2003)						
42.	Hamilton, S.R., et al., "Production of Complex Human Glycoproteins in Yeast", <u>Science</u> , Vol. 301, No. 5637, pp. 1244-1246 (2003)						
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